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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,421	10/09/2001	Sanjeevan Sivalingham	4740-013	6284

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EXAMINER
WILSON, ROBERT W

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/973,421	SIVALINGHAM, SANJEEVAN
	Examiner	**Art Unit**	
	Robert W. Wilson	2661	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*19 January 2006*</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-45*</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☒ Claim(s) <u>*1-15 and 30-35*</u> is/are allowed.
6)☒ Claim(s) <u>*16-19 and 36-45*</u> is/are rejected.
7)☒ Claim(s) <u>*20-22 and 29*</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>*19 January 2006*</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/10/01, 4/17/03 a 6/21/03</u>

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 16-19, 23-28, & 36-45 are rejected under 35 U.S.C. 103(a) as being unpatentable

over XP-002187650 (IDS document of record which contains RFC2002) in view of XP-

002233791 (IDS document of record containing 3GPP2 Draft Standard)

Referring to claim 16, RFC 2002 teaches: authenticating between two nodes.
Identification or message # is sent in a registration request from a 1st node per Pg 27.
The Identification or Message is sent to the 2nd node per Para 3.3 Pg 27.
The 2nd node with the home agent receives the replay registration request or 2nd registration message with a timestamp in the first 32 bits of the Message Identification Format and the ID# is the lower 32 bits of the Message Identification Format per Pgs 67-68 respectively.
The node checks the ID# against a value in the registration and compares the time stamp against the node's clock. The message is accepted if the timestamp is within a reasonable range of the clock and the message ID # is the same as in the register.

RFC2002 does not expressly call for: 1st node to be PCF and the second node to be a PDSN.

XP-002187650 teaches that RFC2002 applies to systems with PCF and PDSN.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilized the PCF and PDSN as the node 1 and node 2 respectively of XP-002187650 to the system of RFC2002 in order to be standards compliant.

In addition RFC2002 teaches:

Regarding claim 17, reply message or 2nd message is validated based upon timestamp and message# per Pgs 67-68.
Regarding claim 18, reply message or 2nd message compare to clock within a certain time or threshold per Pgs 67-68.
Regarding claim 19, reply message or 2nd message compare to clock within a certain time or threshold per Pgs 67-68.

Regarding claim 23, compares the Message ID to predetermined message ID or predetermined code and verifies if the timestamp is close to the clock value per Pgs 67-68.

Referring to claim 24, the combination teaches the method of claim 16,

the combination does not expressly call for: time reference in said PCF

XP-002187650 teaches that RFC2002 applies to systems with PCF and PDSN.

It would have been obvious to add maintaining a time reference ins said PCF of XP-002187650 the method of RFC2002 in order to be standards compliant.

Referring to claim 25, the combination teaches the method of claim 16, a comparing the time stamp to a clock

The combination does not expressly call for: the comparison being performed in the PDSN

XP-002187650 teaches that RFC2002 applies to systems with PCF and PDSN.

It would have been obvious to add performing in the PDSN of XP-002187650 the method of RFC2002 in order to be standards compliant.

Referring to claim 26, the combination teaches the method of claim 24,

The combination does not expressly call for: wherein validating said time stamp in said second registration message comprises computing the age of said second registration message and comparing said age to verification threshold.

RFC2002 teaches: wherein validating said time stamp in said second registration message comprises computing the age of said second registration message and comparing said age to verification threshold per Pg 67-68.

It would have been obvious to add comparing the message to the threshold of RFC2002 the method of the combination in order to be standards compliant.

Referring to claim 27, the combination teaches the method of claim 26, ·
The combination does not expressing call for : wherein the age of said second registration message comprises computing a time difference between said time stamp in said second registration message and said time reference.

RFC2002 teaches: wherein the age of said second registration message comprises computing a time difference between said time stamp in said second registration message and said time reference per Pgs 67-68.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the comparing the time difference to a threshold of RFC2002 to the method of the combination in order to be standards compliant.

Referring to claim 28, the combination teaches: the method of claim 24
The combination does not expressly call for: comprising generating a time stamp for said first registration message sent by said PCF to said PDSN based on said time reference.

RFC2002 teaches: comprising generating a time stamp for said first registration message sent by said PCF to said PDSN based on said time reference per Pgs 67-68.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the generating a time stamp for the first registration message of RFC2002 to the method of the combination in order to be standards compliant.

Referring to claim 36, RFC2002 teaches: A node for routing packets in a system per Pgs 27 & 67-68.
An inherent signal component in a node sends a registration request to a 2nd node per Pgs 27 & Pgs 67-68.
The registration request comprises a message# is the lower 32 bits of the message Identification format per Pgs 27 & 67-68.
A registration replay or reply contains message # in the lower 32 bits and a timestamp or identifier in the first 32 bits of the message identification format per Pgs 27 & 67-68.
The inherent signaling component in the node authenticates the message in the lower 32 bits with the stored value of the registration number and authenticates the timestamp value in the upper 32 bits of the message identification format with the nodes clock value per Pgs 27 & 67-68.

RFC2002 does not expressly call for: node to be PCF and the second node to be a PDSN.

XP-002187650 teaches that RFC2002 applies to systems with PCF and PDSN.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilized the PCF and PDSN as the node and 2nd node respectively of XP-002187650 to the system of RFC2002 in order to be standards compliant.

In Addition RFC2002 teaches:
Regarding claim 37, message number is compared to message number in registered per Pgs 27 & 67-68.
Regarding claim 38, compares the timestamp to the clock per Pgs 27 & 67-68
Regarding claim 39, compares the timestamp to the clock or differential value per Pgs 27 & 67-68.
Regarding claim 40, compares the message number with the registered message number and timestamp to the clock per Pgs 27 & 67-68.

Referring to claim 41, RFC2002 teaches: Mobile IP or wireless network in which the routing between node 1 and node per Pgs 27 & 67-68.

Node 2 receives a registration request with a message # per Pgs 27 & Pgs 67-68.

Node 1 receives a message # in the lower 32 bits and timestamp on the upper 32 bits per Pgs 27 & 67-68.

The inherent signal component in node 1 authenticates the massage # and time stamp returned by node 2 per Pg 27 & 67-68.

RFC2002 does not expressly call for: BSC, PCF, & PDSN.

XP-002187650 teaches that RFC2002 applies to systems with PCF and PDSN which inherently have a BSC.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the PCF & PDSN to node 1 and node respectively of XP-002187650 to the system of RFC2002 in order to be standards compliant.

In Addition RFC2002 teaches:
Regarding claim 42, message number is compared to message number in registered per Pgs 27 & 67-68.
Regarding claim 43, compares the timestamp to the clock computes a value to determine if clock or a differential value per Pgs 27 & 67-68
Regarding claim 44, compares the timestamp to the clock or differential value per Pgs 27 & 67-68.
Regarding claim 45, compares the message number with the registered message number and timestamp to the clock or differential value and determines if close per Pgs 27 & 67-68.

Claim Objections

3.   Claims 20-22, & 29are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims..

Allowable Subject Matter

4.   The invention is directed to a method of authenticating a registration reply messages received by a PCF is responsive to registration messages sent by the PCF to the PDSN.   The method comprises; determining a verification threshold for validating time stamps in registration reply messages, generating a sequence of message number for sequential use in the series of success registrations messages sent by said PCF to said PDSN, said sequence of the message numbers having a repeat interval greater than said verification threshold.

The closest prior art is XP-002233791 entitled 3GPP2 Access Network Interface Operation Specification Version 2.0 dated June 2001 and XP-002187650 entitled Perkins RFC2002 IP Mobility Support dated Oct 1996. XP-002233791 teaches that registration requests to the PDSN from the PCF are performed based upon RFC2002. RFC2002 teaches authenticating between two nodes via identification or message number is sent in a registration request from a 1st node per Pg 27 via two methods. In both methods the message is sent to the 2nd node with a home agent. The 2nd node with the home agent receives replay registration request or 2nd registration message. There are two types a message reply messages. In the first method the message reply message a timestamp is sent in the first 32 bits and a Message ID is sent in the 2nd 32 bits of the Message ID format per Pg 67 & 68 and Para 5.6 & 5.6.1 (No varying sequential number is sent in this method). In the second method a new number is sent in the first 32 bits and a constant mobile Id is sent in the lower 32 bits to the Message ID format (No time stamp is sent with this method)

The closest prior art independently or in combination does not disclose anticipate or render obvious the following claim limitation:

"determining a verification threshold for validating time stamps in registration reply messages;

 generating a sequence of message numbers for sequential use in a series of successive registration message sent by said PCF to said PDSN, said sequence of message numbers having a repeat interval greater than said verification threshold" as claimed in claim 1.

In addition :

Claims 2-15 are allowable because they depend upon claim 1.

This invention is directed to a method of adjusting a first reference time when the difference between the first reference time and a time value which was received in a message does not exceed a threshold.

5.   The closest prior art is Anderson (U.S. Patent No.: 6,356,567). Anderson teaches receiving a PCR value or time value and comparing the PCR value or time value with the local STC or first reference time. If the time difference exceeds a threshold then adjusting correcting the reference time.

The closest prior art independently or in combination does not disclose anticipate or render obvious the following claim limitation:

"adjusting said first reference time based on said PDSN time value if said time difference does not exceed a pre-determined time threshold" as claimed in claim 30.

In addition claims 31-35 are allowed because they depend upon claim 30.

Response to Amendment

6.   Applicant's arguments filed 1/19/06 have been fully considered but they are not persuasive.

The examiner respectively disagrees with the applicant argument that the combination of references does not teach or suggest using both a time stamp and message number to verify a registration reply message as recited in the claims.

Perkins (XP-002187650) which is one of the combination of references teaches: the mobile must verify that the low order 32 bits of any registration reply are identical to the bits sent in the registration request message per Para 5.6 Pg 67 and also that the mobile compares the timestamp in the message to the clock time per Para. 5.6.1 per Pg 68 or using both a time stamp and message number to verify a registration reply message as recited in the claims.

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).
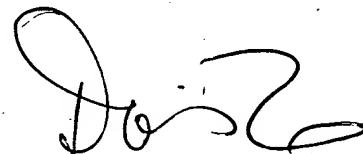
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Doris To can be reached on 571/272-7629. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert W Wilson
Examiner
Art Unit 2616

RWW
3/20/06

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600